Operator's Manual:

Trijicon ACOG (Advanced Combat Optical Gunsight)

Model: 3x30

- TA33-8
- TA33R-8
- TA33-9
- TA33R-9

TABLE OF CONTENTS

Page

Warnings and Cautions 3
Introduction 4
Characteristics 5
Preparation for Use 7
Installation Procedures 9
Operation 13
Cleaning and General Care 21
Safety 23
3x30 ACOG® Models & Available Accessories 25
Patents and Trademarks 27
Limited Lifetime Warranty 28

WARNINGS AND CAUTIONS

☢ *RADIOACTIVE MATERIALS SAFETY PRECAUTIONS* ☢

The ACOG® scope contains radioactive material for nighttime illumination. The radiation source is Hydrogen-3 (H_3), commonly known as tritium. Tritium is an odorless, tasteless, colorless gas that reacts with the human body in the same manner as natural hydrogen. If the ACOG® is crushed or severely damaged to the extent that the tritium lamp inside might be damaged, follow the procedures listed under **SAFETY** on page 23. The ACOG® is regulatd under an EXEMPT LICENSE from the United States Nuclear Regulatory Commission (NRC) held by Trijicon, Inc. Disassembly of the scope is prohibited except by Trijicon, Inc.

TRITIUM FAILURE INSPECTION

Refer to ***Inspection*** on page 7 for the procedure to follow to determine if the tritium lamp in the ACOG® is working correctly.

ADJUSTMENT CAUTION

The ACOG® contains an internal adjustment mechanism to allow zeroing. Adjustment to the extreme ends of the range can result in damage to the internal mechanism. Review the ***Adjustment Procedure*** found on page 13. DO NOT CONTINUE TO ADJUST WINDAGE AND ELEVATION MECHANISMS IF YOU ENCOUNTER RESISTANCE.

INTRODUCTION

The Advanced Combat Optical Gunsight (ACOG®), with dual-illumination technology, features a unique combination of advanced fiber optics and self-luminous tritium. This dual-illumination technology, originally developed for the military and proven in combat, allows the aiming point to always be illuminated. Tritium illuminates the aiming point in total darkness, while the fiber-optic light collector increases reticle brightness according to light levels. This automatically balances aiming point brightness with shooting conditions allowing the Bindon Aiming Concept (BAC) to function.

CHARACTERISTICS

BAC (Bindon Aiming Concept)

Our founder, Glyn Bindon, was passionate in his search for a way to combine the speed of a red dot collimator sight with the long range capabilities of a telescopic riflescope. His search paid off with the discovery of what is now referred to as the Bindon Aiming Concept (BAC). Using both-eyes-open aiming, the human brain is able to instinctively superimpose the illuminated reticle on a moving or close-in target for quick target acquisition. During dynamic movement, the scene through the telescope blurs because the image moves more rapidly due to magnification. The one eye sees the reticle against the blurred target scene, so the brain picks the scene from the unaided eye. The shooter swings the weapon towards the target while perceiving the dot indicating where the weapon is pointed. As soon as the weapon begins to become steady in the target area, the brain switches to the magnified view.

The reticle patterns on all BAC units are illuminated using two light sources, tritium and fiber optics. Tritium, an isotope of hydrogen, illuminates the reticle in low-light or no-light conditions. Most illuminated optics use battery-power, which has a limited lifespan. Tritium has the advantage of a shelf life of at least fifteen years. In daylight

or other environments, fiber optics is used to gather ambient light and focus on the reticle.

Model Characteristics

3x30 ACOG® – This model is a perfect balance of magnification and eye relief. A built-in Bullet Drop Compensator provides shooters accuracy out to 600 meters.

Descriptive Power/ Objective Lens	Magnification	Eye Volume™	Eye Relief	Exit Pupil	Field Of View	Length	Weight	Weight w/ TA60 Mount	Field of View 100 Yards
	x	(in^3)	(in)	(mm)	(deg)	(in)	(oz)	(oz)	(ft)
3x30	3	0.24	3.6	10	3.7	6.1	6.9	11.6	19.3

Figure 1 - Characteristics

PREPARATION FOR USE

Inspection

It is recommended that the tritium lamps be checked for proper functioning every six months or immediately following any incident, which might lead to lamp failure such as the dropping of the ACOG® onto a hard surface.

To determine that the tritium lamp is functioning in the ACOG®, enter a dark room and look though the scope. The reticle should be illuminated as similar to what is shown in Figure 2 on page 7. The illumination provided by the tritium lamp is very faint and will be hard to see without a dark adapted eye. Remain in the dark room for a minute or two to adapt your eyes to the dark. Inspection is easier when the scope is already installed on a weapon. This ensures that you are focused on the reticle pattern.

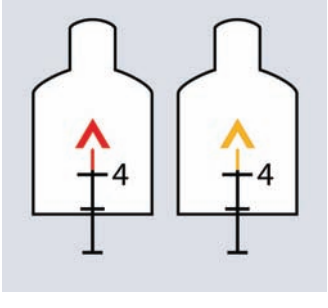

Figure 2 - Red & Amber Chevron Illumination

The reticle should illuminate in low light to complete

darkness. If the reticle does not appear to illuminate in the dark, please contact Trijicon. See further cautions under **SAFETY** on page 23.

If during operation the inside surface of a lens becomes fogged, the ACOG® is no longer sealed -- Contact Trijicon for warranty service instructions.

INSTALLATION PROCEDURES

Installing the 3x30 ACOG on an M16/AR15 with flattop rail

The 3x30 ACOG® easily attaches to the flattop rail system of an M16 or AR15 using the TA60 Mount. This mount is supplied already attached to the scope from the factory. If it should be necessary to remove or re-attach the mount, please refer to the Mount Disassembly section on page 10. Use the following instructions to mount the ACOG® to the flattop rail system with reference to Figure 3.

1. Loosen the mount interface knobs to separate the interface clamp bar away from the mount and against the knobs.

2. Place the ACOG® onto the flattop rail surface. Be sure to engage the interface studs into the receiver grooves on the top mounting surface of the rail. The ACOG® can be positioned in any of the slots on the top of the flattop rail to allow for eye relief adjustment (NOTE: If the ACOG® needs to be removed from

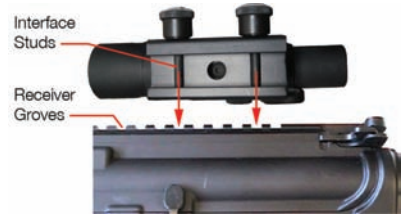

Figure 3

the weapon, the zero can be retained simply by reinstalling the ACOG® into the same slots on the rail system.)

3. Manually tighten the knobs using fingers only. Once the thumbscrews have been finger tightened, using an appropriate sized screwdriver, add an additional ¼ turn. This will ensure the TA60 Mount will not loosen under recoil.

4. Refer to the ***Adjustment Procedures***, on page 13, if this is the first installation onto the weapon.

Mount Disassembly

The Flattop adapter is attached to the ACOG® scope with a one-button, head-cap screw. To remove the screw, use a standard 1/8-inch hex wrench. Be careful when removing the bolt as it is very tight. Take care not to strip the head. The mount is factory installed on the 3x30 ACOG® with the knobs and interface bar on the left side of the scope (when looking at the scope from the eyepiece end). The mount is designed so that it can be installed with the knobs positioned to the right if that is preferred. Simply follow the previous mentioned disassembly instructions, rotate the mount with the knobs on the right and reattach. When replacing the screw, reapplying a high strength threadlocker is recommended.

Installing the 3x30 ACOG® on an M16/AR15 Carrying Handle

Although the TA33 ACOG® was designed and calibrated for use on the flattop rail it can be mounted on the carrying handle. Detach the TA60 mount taking care to not strip the screw heads. Align the threaded mounting hole on the bottom of the ACOG® with the existing hole in the M4/M16 carrying handle. Once properly aligned press down firmly on the optic until it is seated inside the carrying handle rail (see Figure 5 below).

From the bottom of the carrying handle, insert the TA30 screw and washer set (the TA30 Set is sold separately). Ensure the order of sequence is followed (screw, lock washer, special washer) or the screw will eventually shake itself loose. Figure 4 shows the proper assembly of the screw set.

Figure 4—TA30 Set

Figure 5

The TA30 set comes with an 1/8-inch hex wrench which perfectly fits the screw. Using ONLY the hex wrench, tighten the screw and washer set snug and then tighten another quarter turn to ensure the screw is secure. Using excessive force to tighten the screw and washer set will break the locking washer in half. Take care not to over tighten.

OPERATION

CAUTION

The 3x30 ACOG contains an internal adjustment mechanism to allow zeroing. Adjustments to the extreme ends of the range can result in damage to the internal prism assembly. Do not continue to adjust windage and elevation mechanism if you encounter resistance. If it seems you need more adjustment than is available, please contact Trijicon, Inc.

Adjustment Procedures

The 3x30 ACOG is internally adjustable. Adjustment is made using the adjuster mechanisms located inside the adjuster caps on the top and right-hand side of the scope. This adjustment can be made with a small screwdriver or with a bullet case. The caps are very tight to ensure a waterproof seal with the O-rings inside. The caps should only be off the scope when adjustments are being made (See NOTE on page 15). See Figure 6.

The 3x30 ACOG is shipped with a pre-centered setting. Normally this means that only small adjustments are necessary. Do not adjust the scope to the extremes. It is

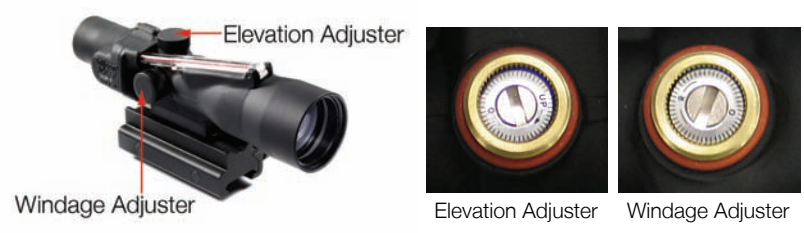

Figure 6

possible that over-adjustment will damage the precise alignment of the prism assembly inside the riflescope (see *CAUTION* page 13).

If the windage and elevation adjustment resistance increases, the limit of adjustment travel is being approached. Adjust further only with caution.

As the limits of the windage and elevation adjustments are reached, the adjustment mechanism will become more and more difficult to adjust. If the adjustment mechanism is adjusted past this point, it may break.

NOTE: The 3x30 ACOG is waterproof up to 66 feet, but only when the adjuster caps are firmly screwed onto the scope. The caps should only be off the scope when adjustments are being made. Take care not to apply undue pressure when installing the caps, as they may become difficult to remove if tightened excessively.

Zeroing the 3x30 ACOG

The method of adjustment with the ACOG® is slightly different than other scopes. Adjustment increments for the 3x30 are ¼ -inch per click at 100-meters. This means that four clicks are required to move the bullet one-inch on the target. At 25 meters, 16 clicks moves the bullet approximately one-inch.

The arrows on the adjusters point in the direction which they must be moved to cause the bullet to move in that same direction. In other words, if the Point of Impact (POI) is two-inches to the left of the aiming point, the adjuster on the side of the 3x30 ACOG® should be moved eight "clicks" in the direction marked "R" (right). This will move the bullet two-inches to the right and onto target. Similarly, if the bullet is striking low on the target, you must move the adjuster on the top of the riflescope in the direction "U" (up). [Of course if the bullet is right or high of center, the adjusters must be turned the other directions, away from the "R" and "U" directions indicated.]

To ensure a consistent zero, it is best to fire one shot off target, allowing the recoil to stabilize the adjustment mechanism after an adjustment has been made, and then fire a three shot group on the target.

To save time, ammunition and to ensure your rounds are on target prior to moving to 100 meters, Trijicon recommends the ACOG receive a preliminary "Battle Sight Zero" at 25 meters. To apply this initial zero, the tip of the 300 meter vertical post is used as the point of aim/point of impact (POA/POI). See Figure 7. (See ***Bullet Drop Compensator (BDC) Units*** section).

The TA33 ACOG scope is designed to be zeroed at 100 meters using the tip of the Chevron reticle as the point of aim/point of impact (POA/POI). In order for the bullet drop compensator to work correctly, a 100 meter zero should be verified. The 100 meter zero allows the BDC reticle to be used effectively to 600 meters.

Bullet Drop Compensator (BDC) Units

The reticle pattern for the 3x30 ACOG is carefully designed so that the user does not need to make adjustments to the windage or elevation adjusters between shots at different distances. Because this ranging capability is built into the reticle pattern and because it is parallax free along its vertical axis, the 3x30 is accurate out to 600 meters (see Figure 8).

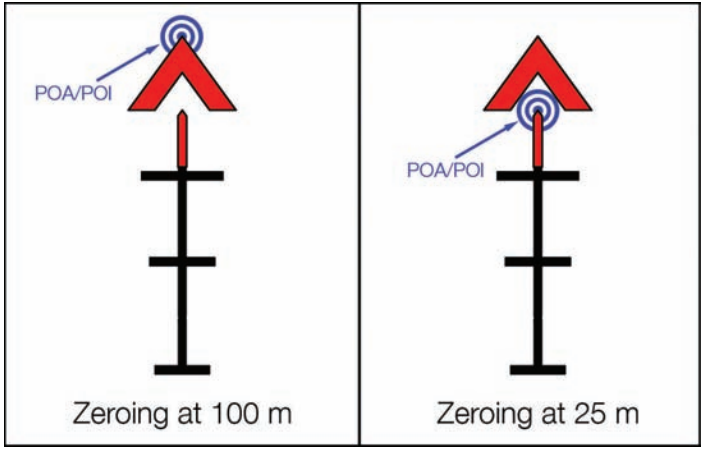

Figure 7

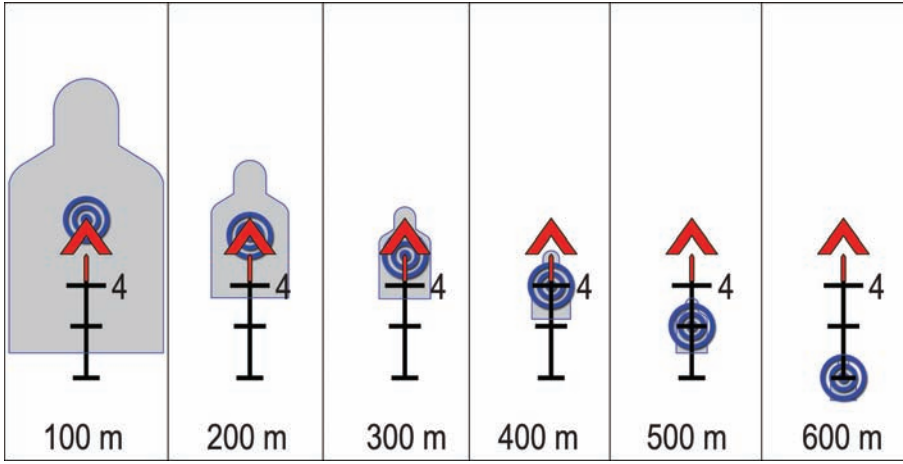

Figure 8—Ranging Diagram

To utilize the reticle so that it is accurate out to 600 meters, the chevron tip is used as the point of aim and is zeroed at 100 meters. Figure 8 shows the aim for a silhouette target at ranges from 100 to 600 meters. The widths of the horizontal hash marks on the Bullet Drop Compensated reticle in the TA33 ACOG corresponds to the average width of a mans shoulders (19 inches) at that range.

Dual-Illuminated Reticle

For the 3x30 ACOG® scope, the reticle is constantly illuminated. It glows in low/no light from the power of a tritium lamp which is guaranteed to illuminate for 15 years. The fiber optic system automatically adjusts the brightness level and contrast of the reticle to available light conditions. This system makes an almost perfect transition through all levels of light until only the tritium lamp is used to illuminate the reticle in very low light or complete darkness. No batteries are ever required to illuminate the reticle.

Special Rapid Aiming Technique (BAC: Bindon Aiming Concept)

In order to take advantage of this feature, it is best to keep both eyes open at all times. Raise the weapon and begin to move it into alignment with the target area.

An illuminated reticle is visible in the sight picture indicating where the weapon is pointed. As soon as you get close to the target, your brain will automatically switch to the magnified view as you make your final exact telescopic aim. It takes less time to learn than the time to read this page.

When the weapon is being moved, the image through the telescope blurs much more quickly than the view from the other, unmagnified eye. The brain registers the non-blurry view automatically. As you close in to the proper aim on the target and your movement slows, the blur ceases, and your brain instantly registers the greater detail of the magnified view. About 4% of the population (mostly those who are cross-eye dominate or blind in one eye) cannot use the BAC feature, but can still employ the ACOG in the same method as a standard riflescope.

CLEANING AND GENERAL CARE

The ACOG® requires very little maintenance. Included with every scope is a LENSPEN® which features a brush to dust off dirt and a felt-tipped-lens cleaner. To clean the ACOG utilizing the LENSPEN® (Figure 10), first depress and push forward the Lens Brush Slider, exposing the Lens Brush. Use this brush to remove all debris from the unit. Pay special attention to the lenses. ALL foreign material must be removed before using the Felt Lens Cleaner to minimize scratching.

Figure 10

Next, remove the cap from the opposite end of the LENSPEN® to expose the Felt Lens Cleaner. Before use, check that there is NO debris on the felt surface of the LENSPEN®. Starting in the center of the lens, press the felt surface of the pen against the lens and work from the center to the outside edge of the lens in a spiral motion. Repeat if necessary.

When finished, depress Lens Brush Slider and retract the brush into the LENSPEN®. Replace the cap over the Felt Lens Cleaner.

If the lenses become dirty and the LENSPEN® is not readily accessible, the unit can be washed using fresh water and a clean cloth. Be careful to rinse the lenses fully before cleaning it with the cloth. The lenses could be scratched if dirt is pulled along the lens by the cloth. In cold weather, if the outside lens surface fogs over, wipe with a clean cloth.

Repair or maintenance other than that described in the Assembly and Disassembly of Spare Parts section is prohibited by anyone other than the manufacturer because of the radioactive material contained in the ACOG®.

SAFETY

The ACOG® scope contains radioactive material for nighttime illumination. The radiation source is Hydrogen-3, commonly known as tritium. Tritium is a naturally occurring odorless, tasteless, colorless gas that reacts with the human body in the same manner as natural hydrogen. The body does not easily retain hydrogen or tritium as a gas. However, the oxide, HTO, which is formed by the burning of tritium, is 10,000 times more hazardous. For this reason great care should be taken to avoid flame in the presence of the ACOG® scope with a tritium lamp which is broken or is suspected of leaking.

If the tritium lamp in the ACOG® is broken or is suspected of being broken, place the unit in a sealed plastic bag and contact Trijicon, Inc. for handling and replacement instructions.

After contact with a unit with a broken lamp, a person should wash their hands carefully with soap and water. Do not handle such a defective ACOG® scope if you have open skin cuts or abrasions. Work with a defective unit only in a well-ventilated area and avoid inhaling air near the unit.

Do not eat, drink, smoke or apply cosmetics in the presence of a defective unit. Repair of these defective units is only authorized by the manufacturer, Trijicon, Inc. Contact Trijicon, Inc. for handling and replacement instructions.

3x30 ACOG® MODELS & AVAILABLE ACCESSORIES

3x30 ACOG® Scopes

MFG #	Description
TA33-8	ACOG® 3x30 Scope, Dual Illumination Amber Chevron .223 Ballistic Reticle w/TA60 Mount
TA33-9	ACOG® 3x30 Scope, Dual Illumination Amber Chevron .308 Ballistic Reticle w/TA60 Mount
TA33R-8	ACOG® 3x30 Scope, Dual Illumination Red Chevron .223 Ballistic Reticle w/TA60 Mount
TA33R-9	ACOG® 3x30 Scope, Dual Illumination Red Chevron .308 Ballistic Reticle w/TA60 Mount

ACOG® Mounts & Accessories

MFG #	Description
TA03	ACOG® adapter for H&K rifles
TA04*	ACOG® Adapter for Special Receiver AUG
TA12	A.R.M.S.® Throw Lever Adapter for Picattiny Rails
TA13*	ACOG® adapter for Sig 550 Rifle
TA14*	ACOG® adapter for Beretta 70/90 Rifle
TA18*	A.R.M.S.® #10 Multi-position/Thumbscrew Flattop Adapter for ACOG®

TA30	ACOG® Extra screw & lock washer
TA51	ACOG® Picattiny Rail Adapter with Colt style thumbscrews
TA51S*	ACOG® Special Adapter with Colt style thumbscrews
TA51W	ACOG® Weaver Adapter with Colt style thumbscrews
TA53	ACOG® Thumb Screw
TA53A	ACOG® Thumb Screw (RCO)
TA60	1.5x, 2x & 3x ACOG M16 base Flattop Adapter
TA62	Scopecoat™ fitted for 1.5x, 2x and 3x ACOG® Scope Models
TA70	M14/M1A Low Profile Picattiny Rail Mount
TA86	RCO 4X32 ACOG® Pouch
TA87	Tenebraex killFLASH® Anti-Reflection Device for 3x30 ACOG® Scope
LENSPEN	Trijicon LENSPEN® for all optics

** Denotes a special order item*

LENSPEN® is a registered trademark of International Parkside Products Inc.
A.R.M.S.® is a registered trademark of Atlantic Research Marketing Systems, Inc.
killFLASH® is a registered trademark of Tenebraex Corporation.
Scopecoat™ is a registered trademark of Devtron Diversified (Devtron Scopecoat)

PATENTS AND TRADEMARKS

The ACOG® is covered by the following patents:

- U.S. 4,806,007
- Germany D.B.P. No. P3853127.5
- Great Britain EP 0315379
- Canada 1,305,341
- Austria EP 0315379
- Australia 605076
- South Africa 88/8185
- Switzerland EP 0315379+NO
- France EP 0311579
- Japan 2632976

Other U.S. and foreign patents are Pending.

The ACOG® is covered by the following product configuration trademarks:

- U.S. 3,190,442
- U.S. 3,047,581
- U.S. 3,047,582

Other U.S. and foreign trademarks are pending.

LIMITED LIFETIME WARRANTY

The original owner of the Trijicon® product registered with this card is entitled to repair or replacement (at our option) of the registered item if it should fail due to defects in material or workmanship during normal use. This warranty specifically applies to the optical systems and metal structure of the product and does not apply to the illumination system. The tritium lamp is warranted to glow for 5 years for orange night sights, 10 years in non-fiber optic scopes, twelve years in green and yellow night sights or fifteen years in fiber optic scopes from date of original manufacture. If repair is necessary, please contact our Customer Service Department for return instructions. This warranty does not apply to defects caused by anything which is deemed abnormal, abusive, or improper including any fault resulting from an accident or improper service. Special Note: Trijicon® PRODUCTS CONTAIN TRITIUM AND ARE REGULATED BY THE NUCLEAR REGULATORY COMMISSION. THEY MAY NOT BE DISASSEMBLED BY ANYONE OTHER THAN TRIJICON, INC WHICH HOLDS THE NECESSARY LICENSES. Any attempt at disassembly or repair will annul this warranty. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Trijicon, Inc.
49385 Shafer Avenue
P.O. Box 930059
Wixom, MI 48393
1-800-338-0563
248-960-7700
www.trijicon.com